EOS news item :

The NASDA Global Rain Forest Mapping (GRFM) Project Releases First CD-ROM

by Bruce Chapman, Victor Taylor, and Ake Rosenqvist

The goal of the Global Rain Forest Mapping project (GRFM) is to acquire contiguous, high resolution L-band Synthetic Aperture Radar (SAR) imagery of the major tropical rain forests of the world using the Japanese Earth Resources Satellite (JERS-1) SAR. This project began in 1995, and has acquired data from the following geographic regions : South and Central America, Central and Western Africa, and South-East Asia and Northern Australia. Each region was observed at least once during a "single season" between September 1995 and January 1997.

Led by the Earth Observation Research Center (EORC) of the National Space Development Agency of Japan (NASDA), this project forms one component of NASDA's Global Forest Mapping program. The projects associated with this program are international in scope and rely on cooperation with, among others, the NASA/Jet Propulsion Laboratory (JPL), the Alaska SAR Facility (ASF), the Space Applications Institute of the Joint Research Centre of the European Commission (JRC/SAI), the University of California, Santa Barbara (UCSB), the Brazilian National Institute for Space Research (INPE) and the National Institute for Research of the Amazon(INPA).

(Fig. 1 : coverage map)
caption : Fig 1. GRFM project coverage (1995-1997).

The GRFM project is currently working to distribute the data to interested scientists via CD-ROM. In addition, the GRFM project has an international team of invited investigators studying the imagery and deriving science products. The imagery from this project is particularly useful for identifying flooded conditions, due to the "double bounce" scattering mechanism that dominates the L-band radar backscatter of the JERS-1 SAR data over flooded forests. However, the short duration of each data acquisition (on the order of 2 months), the independence from solar illumination angle effects, the transparency of clouds and rain to the JERS-1 SAR, and the high resolution (25 meters resolution imagery

was averaged down to 100 meters for the CD-ROM), make this unprecedented data set suitable for a wide variety of scientific studies.

South and Central America

The entire Amazon river basin, from the Atlantic to the Pacific, was acquired in a single sweep during the generally low flood of the Amazon River in September - December 1995. This portion of the data set comprises some 1500 (ASF processed) scenes and covers an area of about 8 million km^2. The same area, including the Northern part of South America and Central America, was covered again in May - August 1996, during a high flood period of the Amazon river.

See figure 2 for an example of one of the 26 mosaic "tiles" on the recently released AM-2 CD-ROM. The data was acquired during the month of October 1995, during the middle of the lowest flood levels seen along the Amazon in many years. The resolution of the mosaics on the CD-ROMs is about 100 meters (3 arcseconds). The most prominent features in this image are the rivers (dark grey or black) flowing from West to East, the Balbinas Reservoir for which the surrounding area appears bright due to flooded forests at its periphery, and the city of Manaus, Brazil, which is the bright area near the center of the image. In addition, fields cleared for agricultural purposes are clearly evident as darker grey areas.

(Fig. 2 : mosaic tile 113)

Caption : Fig 2. Mosaic tile 113 from GRFM CD-ROM volume AM-2. This mosaic tile contains about 80 ASF processed JERS-1 SAR images, and is approximately centered on the City of Manaus, where the Rio Solimoes and Rio Negro join to form the Rio Amazonas. The upper left coordinates are 0 degrees Latitude, -63 degrees Longitude; the lower right coordinates are -5 degrees Latitude, -58 degrees Longitude.

Africa

SAR data over Central and West Africa, from the Eastern coast of Kenya to Liberia and Guinea in the West were acquired in January-March 1996. The area covered lies between 9 deg north and 9 deg South, extends approximately 6000 km along the equator and amounts to about 2000 NASDA processed scenes or 8 million km^2. The Congo River

Basin, about 3.5 million km^2, was also covered during October - November 1996 (the high water season of the river). Madagascar was acquired in January 1997.

South East Asia

Finally, South-East Asia, including the major islands of New Guinea, Borneo/Kalimantan, the Philippine Islands, Java, Sulawesi, Sumatra, the Indochina peninsula and, in addition, northern Australia, were covered in late 1996 and early 1997. This area covers approximately 4000 NASDA processed scenes.

CD-ROMs

Several CD-ROMs are planned for production during 1998 and 1999. These CD-ROMs will contain both 3 arcsec (89-93 meter) binary image files, and lower resolution 15 arcsec (445-465 meter) GIF images. These images will be mosaics of the individual JERS-1 image scenes. Typically, around 80 JERS-1 image scenes are contained within each mosaic. The tentative catalog is as follows (the CD-ROMs will not be made in chronological order): Please check the NASDA GRFM home page for availability and ordering instructions for the GRFM CD-ROMs (http:// www.eorc.nasda.go.jp/Sciences/Forest or http://southport.jpl.nasa.gov/GRFM/) .

Volume name	Region	Acquisition dates	# of disks in set
AM-1	South America	Selected scenes	2
AM-2	South America	September/December 1995	2
AM-3	South America	September/December 1995 and May/July 1996	4
AFR-1	Africa	Selected scenes	2
AFR-2	Central and Western Africa	January/March 1996	2
AFR-3	Central Africa	October/November 1996	1
SEA-1	S.E. Asia	Selected scenes	2
SEA-2	S.E. Asia	November 1996/February 1997	3

Table 1 : GRFM CD-ROM contents. AM-2 is currently available.

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Addresses :

Bruce Chapman
Jet Propulsion Laboratory M/S 300-227
4800 Oak Grove Drive
Pasadena, CA 91109 USA

Victor Taylor
Earth Observation Research Center (EORC)
National Space Development Agency of Japan
1-9-9, Roppongi, Minato-ku,
Tokyo, 106 Japan

Ake Rosenqvist
Joint Research Centre of the European Commission
Space Applications Institute - MTV unit
TP 440, I-21020 ISPRA (VA), Italy

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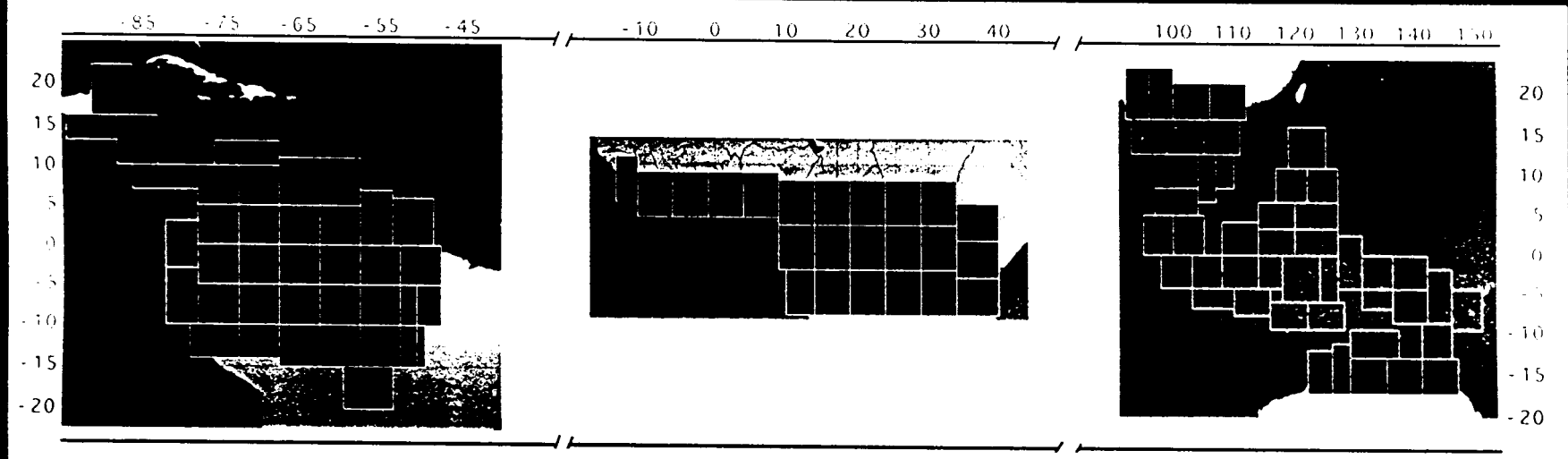

GRFM Coverage - 1995- 1997